

Notice of Allowability

Application No.

10/673,905

Examiner

Siu M. Lee

Applicant(s)

WILLINGHAM, SCOTT D.

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 8/30/2007.
2. ☒ The allowed claim(s) is/are 1,3-8,11-15,17-19 and 22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Stephen J. Curran on 11/1/2007.

Regarding claim 22, replace lines 2-3; "an oscillator means including an oscillator for generating a calibration tone and PLL reference signal;" with **---an oscillator means including an oscillator for generating an oscillator signal, generating a calibration tone by dividing the oscillator signal by a first amount, and a PLL reference signal by dividing the oscillator signal by a second amount;---**.

Allowable Subject Matter

2. Claims 1, 3-8, 11-15, 17-19, 22 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present invention describes a receiver including an oscillation circuit for generating a image rejection calibration tone comprising an oscillator circuit including an oscillator configured to generate an oscillator signal, wherein the oscillator signal is divided by a first amount to generate a calibration tone and by a second amount to

Art Unit: 2611

generate a phase locked loop (PLL) reference signal; a phase locked loop circuit configured to generate a PLL output signal that is phase locked in relation to the PLL reference signal; a quadrature generator configured to generate quadrature mixer local oscillator (LO) signals derived from the PLL output signal; and an in-phase/quadrature (IQ) mixer configured to mix the calibration tone with the quadrature mixer LO signals; a first switch coupled to selectively provide the calibration tone to the IQ mixer during a calibration mode of operation; and a second switch coupled to selectively provide the PLL reference signal to the phase locked loop circuit during the calibration mode of operation, and to provide a different reference signal to the phase locked loop circuit during a normal mode of operation. The closest prior art, Li (US 6,760,577 B2) discloses a alignment method and apparatus for I/Q phase and amplitude error correction and image rejection improvement that is similar to the instant invention but fail to discloses an oscillator circuit including an oscillator configured to generate an oscillator signal, wherein the oscillator signal is divided by a first amount to generate a calibration tone and by a second amount to generate a phase locked loop (PLL) reference signal. This distinct feature has been added to the independent claims 1, 18, and 22, thus rendering claims 1, 3-8, 11-15, 17-19, 22 allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2611

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Siu M. Lee whose telephone number is (571) 270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Siu M Lee
Examiner
Art Unit 2611
11/1/2007


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER